

**SECTION 09 68 00**  
**CARPETING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Section specifies carpet tile, edge strips, adhesives, and other items required for complete installation.

**1.2 RELATED WORK**

- A. Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS for additional LEED requirements.
- B. Section 01 81 19, INDOOR AIR QUALITY REQUIREMENTS for VOC limit.
- C. Color and texture of carpet tile and edge strip: Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Resilient wall base: Section 09 65 13, RESILIENT BASE AND ACCESSORIES.

**1.3 QUALITY ASSURANCE**

- A. Carpet tile installed by mechanics certified by the Floor Covering Installation Board.
- B. Certify and label the carpet tile that it has been tested and meets criteria of CRI IAQ Carpet Testing Program for indoor air quality.

**1.4 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Product Data:
  - 1. Manufacturer's catalog data and printed documentation stating physical characteristics, durability, resistance to fading and flame resistance characteristics for each type of carpet tile material and installation accessory.
  - 2. Manufacturer's printed installation instructions for the carpet tile, including preparation of installation substrate, seaming techniques and recommended adhesives and tapes.
  - 3. Manufacturer's certificate verifying carpet tile containing recycled materials include percentage of recycled materials as specified.
- C. Samples:
  - 1. Carpet tile: "Production Quality" samples 300 x 300 mm (12 x 12 inches) of carpet tile, showing quality, pattern and color specified in Section 09 06 00, SCHEDULE FOR FINISHES.
  - 2. Floor Edge Strip (Molding): 150 mm (6 inches) long of each color and type specified.
  - 3. Base Edge Strip (Molding): 150 mm (6 inches) long of each color specified.

- D. Shop Drawings: Installers layout plan showing seams and cuts for carpet tile.
- E. Maintenance Data: Carpet tile manufacturer's maintenance instructions describing recommended type of cleaning equipment and material, spotting and cleaning methods and cleaning cycles.
- F. LEED Submittals:
  - 1. Credits MR 4.1 & 4.2: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
    - a. Include statement indicating costs for each product containing recycled content.
  - 2. Credit EQ 4.1: Manufacturer's product data for installation adhesives and sealants applied on site and within the vapor barrier, including printed statement of VOC content (in g/L).
  - 3. Credit EQ 4.3:
    - a. Manufacturer's product data for carpet tile, including statement of compliance with CRI Green Label Plus testing and requirements.
    - b. Manufacturer's product data for carpet cushion including statement of compliance with CRI Green Label testing and requirements.
    - c. Manufacturer's product data for installation adhesive, including printed statement of VOC content (in g/L).

#### **1.5 DELIVERY AND STORAGE**

- A. Deliver carpet tile in manufacturer's original wrappings and packages clearly labeled with manufacturer's name, brand, name, size, dye lot number and related information.
- B. Deliver adhesives in containers clearly labeled with manufacturer's name, brand name, number, installation instructions, safety instructions and flash points.
- C. Store in a clean, dry, well ventilated area, protected from damage and soiling. Maintain storage space at a temperature above 16 degrees C (60 degrees F) for 2 days prior to installation.

#### **1.6 ENVIRONMENTAL REQUIREMENTS**

- A. Areas in which carpet tile is to be installed shall be maintained at a temperature above 16 degrees C (60 degrees F) for 2 days before installation, during installation and for 2 days after installation. A minimum temperature of 13 degrees C (55 degrees F) shall be maintained thereafter for the duration of the contract. Traffic or movement of furniture or equipment in carpet tile area shall not be permitted for 24 hours after installation. Other work which would damage the carpet tile shall be completed prior to installation of carpet tile.

**1.7 WARRANTY**

- A. Carpet tile and installation subject to terms of "Warranty of Construction" FAR clause 52.246-21, except that warranty period is extended to two years.

**1.8 APPLICABLE PUBLICATIONS**

- A. Publication listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American National Standards Institute (ANSI):  
ANSI/NSF 140-07.....Sustainable Carpet Assessment Standard
- C. American Association of Textile Chemists and Colorists (AATCC):  
AATCC 16-04.....Colorfastness to Light  
AATCC 129-05.....Colorfastness to Ozone in the Atmosphere under High Humidities  
AATCC 134-06.....Electric Static Propensity of Carpets  
AATCC 165-99.....Colorfastness to Crocking: Textile Floor Conerings-AATCC Crockmeter Method
- D. American Society for Testing and Materials (ASTM):  
ASTM D1335-05.....Tuft Bind of Pile Yarn Floor Coverings  
ASTM D3278-96 (R2004)...Flash Point of Liquids by Small Scale Closed-Cup Apparatus  
ASTM D5116-06.....Determinations of Organic Emissions from Indoor Materials/Products  
ASTM D5252-05.....Operation of the Hexapod Tumble Drum Tester  
ASTM D5417-05.....Operation of the Vettermann Drum Tester  
ASTM E648-06.....Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
- E. The Carpet and Rug Institute (CRI):  
CRI 104-02.....Installation of Commercial Carpet

**PART 2 - PRODUCTS****2.1 CARPET TILE**

- A. LEED Requirements:
1. Recycled Content of Steel Products: Provide steel products with minimum 25% post-consumer recycled content.
  2. Provide installation adhesives, sealants, paints, and coatings applied on site and within the vapor barrier, that comply with VOC limits outlined in Division 01 Section "Indoor Air Quality Requirements."
  3. Provide carpet that complies with CRI Green Label Plus testing and requirements.

Provide carpet cushion that complies CRI Green Label testing and requirements.

B. Physical Characteristics:

1. Carpet tile free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects.
2. Provide static control to permanently control static build up to less than 2.0 kV when tested at 20 percent relative humidity and 21 degrees C (70 degrees F) in accordance with AATCC 134.
3. Backing materials: Manufacturer's unitary backing designed for glue-down installation using recovered materials.
4. Appearance Retention Rating (ARR): Carpet tile shall be tested and have the minimum 3.5-4.0 Severe ARR when tested in accordance with either the ASTM D 5252 (Hexapod) or ASTM D 5417 (Vettermann) test methods using the number of cycles for short and long term tests as specified.
5. Tuft Bind: Minimum force of 40 N (10 lb) required to pull a tuft or loop free from carpet tile backing. Test per ASTM D1335.
6. Colorfastness to Crocking: Dry and wet crocking and water bleed, comply with AATCC 165 Color Transference Chart for colors, minimum class 4 rating.
7. Colorfastness to Ozone: Comply with AATCC 129, minimum rating of 4 on the AATCC color transfer chart.
8. Delamination Strength: Minimum of 440 N/m (2.5 lb/inch) between secondary backing.
9. Flammability and Critical Radiant Flux Requirements:
  - a. Test Carpet tile in accordance with ASTM E 648.
  - b. Class I: Not less than 0.45 watts per square centimeter.
  - c. Class II: Not less than 0.22 watts per square centimeter.
10. Density: Average Pile Yarn Density (APYD):
  - a. Corridors, lobbies, entrances, common areas or multipurpose rooms, open offices, waiting areas and dining areas: Minimum APYD 6000.
  - b. Other areas: Minimum APYD 4000.
11. VOC Limits: Use carpet tile and carpet adhesive that comply with the following limits for VOC content when tested according to ASTM D 5116:
  - a. Carpet tile, Total VOCs: 0.5 mg/sq.m x hr.
  - b. Carpet tile, 4-PC (4-Phenylcyclohexene): 0.05 mg/sq.m x hr.
  - c. Carpet tile, Formaldehyde: 0.05 mg/sq.m x hr.
  - d. Carpet tile, Styrene: 0.4 mg/sq.m x hr.

- e. Adhesive, Total VOCs: 10.00 mg/sq.m x hr.
- f. Adhesive, Formaldehyde: 0.05 mg/sq.m x hr.
- g. Adhesive, 2-Ethyl-1-Hexanol: 3.00 mg/sq.m x hr.
- C. Shall meet platinum level of ANSI/NSF 140.
- D. Color, Texture, and Pattern: As specified in Section 09 06 00, SCHEDULE FOR FINISHES.

**2.2 CARPET TILE (CPT-1 & 2)**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Constantine Commercial; Archetype or approved equivalent.
- B. Color: Refer to Section 090600, SCHEDULE OF FINISHES.
- C. Pattern Repeat: None by 40-1/2 inches long.
- D. Fiber Content: 100 percent nylon 6, 6.
- E. Fiber Type: Ultron.
- F. Pile Characteristic: Loop pile.
- G. Yarn Twist: 5.0 per inch.
- H. Pile Thickness: 0.15 inches for finished carpet tile.
- I. Tufts: 192 per square inch.
- J. Total Weight: 31 oz./sq. yd. for finished carpet tile.
- K. Primary Backing/Backcoating: Manufacturer's standard multi-layered woven and non-woven composite.
- L. Secondary Backing: Manufacturer's standard 100% closed cell vinyl composite backing with fiberglass inter-liner, 33% post-industrial recycled content.
- M. Size: 24 by 24 inches (610 by 610 mm).
- N. Applied Soil-Resistance Treatment: Manufacturer's standard material.
- O. Antimicrobial Treatment: Manufacturer's standard material.

**2.3 ENTRY MAT (EM-1)**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Interface Flor; SuperFlor or approved equivalent.
- B. Color: Refer to Section 09 60 00, SCHEDULE OF FINISHES.
- C. Fiber Content: 82.5 percent nylon; 17.5 percent polyester.
- D. Fiber Type: Dorix.
- E. Pile Characteristic: Needle punch modular carpet.
- F. Density: 10.5 kilotex per cm<sup>2</sup>.
- G. Pile Thickness: 4.0 (mm).
- H. Gage: 1/10 inch.
- I. Total Thickness: 8.2 mm.
- J. Total Weight: 24 oz./sq. yd.
- K. Primary Backing/Backcoating: Manufacturer's standard composite materials.

- L. Secondary Backing: Manufacturer's standard material.
- M. Backing System:
- N. Size: (500 by 500 mm).
- O. Applied Soil-Resistance Treatment: Manufacturer's standard material.
- P. Antimicrobial Treatment: Manufacturer's standard material.

#### **2.4 ADHESIVE AND CONCRETE PRIMER**

- A. Waterproof, resistant to cleaning solutions, steam and water, nonflammable, complies with air-quality standards as specified. Adhesives flashpoint minimum 60 degrees C (140 degrees F), complies with ASTM D 3278.
- B. Seam Adhesives: Waterproof, non-flammable and non-staining.

#### **2.5 SEAMING TAPE**

- A. Permanently resistant to carpet tile cleaning solutions, steam, and water.
- B. Recommended by carpet tile manufacturer.

#### **2.6 EDGE STRIPS (MOLDING)**

- A. Metal:
  - 1. Hammered surface aluminum, pinless, clamp down type designed for the carpet tile being installed.
  - 2. Floor flange not less than 38 mm (1-1/2 inches) wide, face not less than 16 mm (5/8 inch) wide.
  - 3. Finish: Clear anodic coating unless specified otherwise in Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Vinyl Edge Strip:
  - 1. Beveled floor flange minimum 50 mm (2 inches) wide.
  - 2. Beveled surface to finish flush with carpet tile for tight joint and other side to floor finish.
  - 3. Color as specified in Section 09 06 00, SCHEDULE FOR FINISHES.
- C. Carpet tile Base Top Edge Strip:
  - 1. Vinyl "J" strip wall flange minimum of 38 mm (1-1/2 inches) wide with cap beveled from wall to finish flush with carpet tile being installed.
  - 2. Color as specified in Section 09 06 00, SCHEDULE FOR FINISHES.

#### **2.7 LEVELING COMPOUND (FOR CONCRETE FLOORS)**

- A. Provide Portland cement bases polymer modifier with latex or polyvinyl acetate resin manufactured specifically for resurfacing and leveling concrete floors. Products containing gypsum are not acceptable.
- B. Determine the type of underlayment selected for use by condition to be corrected.

**PART 3 - EXECUTION****3.1 SURFACE PREPARATION**

- A. Examine surfaces on which carpet tile is to be installed.
- B. Clean floor of oil, waxy films, paint, dust and deleterious substances that prevent adhesion, leave floor dry and cured, free of residue from curing or cleaning agents.
- C. Correct conditions which will impair proper installation, including trowel marks, pits, dents, protrusions, cracks or joints.
- D. Fill cracks, joints depressions, and other irregularities in concrete with leveling compound.
  - 1. Do not use adhesive for filling or leveling purposes.
  - 2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
  - 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joint lines.
- E. Test new concrete subfloor prior to adhesive application for moisture and surface alkalinity per CRI 104 Section 6.3.1 or per ASTM E1907.

**3.2 CARPET TILE INSTALLATION**

- A. Do not install carpet tile until work of other trades including painting is complete and dry.
- B. Install in accordance with CRI 104 direct glue down installation.
  - 1. Comply with indoor air quality recommendations noted in Section 6.5.
  - 2. Maintain temperature in accordance with Section 15.3.
- C. Secure carpet tile to subfloor of spaces with adhesive applied as recommended by carpet tile manufacturer.
- D. Follow carpet tile manufacturer's recommendations for matching pattern and texture directions.
- E. Cut openings in carpet tile where required for installing equipment, pipes, outlets, and penetrations.
  - 1. Bind or seal cut edge of carpet tile and replace flanges or plates.
  - 2. Use additional adhesive to secure carpet tiles around pipes and other vertical projections.
- F. Carpet Tile Modules:
  - 1. Install per CRI 104, Section 13, Adhesive Application.
  - 2. Lay carpet tile modules with pile in same direction unless specified other wise in Section 09 06 00, SCHEDULE FOR FINISHES.
  - 3. Install carpet tile modules so that cleaning methods and solutions do not cause dislocation of modules.
  - 4. Lay carpet tile modules uniformly to provide tight flush joints free from movement when subject to traffic.

### **3.3 EDGE STRIPS INSTALLATION**

- A. Install edge strips over exposed carpet tile edges adjacent to uncarpeted finish flooring.
- B. Anchor metal strips to floor with suitable fasteners. Apply adhesive to edge strips, insert carpet tile into lip and press it down over carpet tile.
- C. Anchor vinyl edge strip to floor with adhesive apply adhesive to edge strip and insert carpet tile into lip and press lip down over carpet tile.

### **3.4 PROTECTION AND CLEANING**

- A. Remove waste, fasteners and other cuttings from carpet tile floors.
- B. Vacuum carpet tile and provide suitable protection. Do not use polyethylene film.
- C. Do not permit traffic on carpeted surfaces for at least 48 hours after installation. Protect the carpet tile in accordance with CRI 104.
- D. Do not move furniture or equipment on unprotected carpeted surfaces.
- E. Just before final acceptance of work, remove protection and vacuum carpet tile clean.

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